2025年度 東邦大学医学部 一般入試 そっくり類題セット：英 語（問題冊子）

試験時間：90分 ／ 配点：150点満点（大問1〜6・全マークシート選択式） ／ 解説：Mio先生・ニックニ先生（TMPS医学館）

大問	出題形式・分野	テーマ（東邦大学医学部 2025年度 本試験完全準拠）	目標時間
[1]	長文読解（設問1〜5）	人類の進化史：農耕・牧畜への移行と乳糖耐性遺伝子の拡散・古代DNA解析	20分
[2]	文法・語法正誤（設問1〜5）	睡眠と入浴の生理学："What use is a warm bath before sleep?"	7分
[3]	長文読解（設問1〜5）	ウィリアム・オスラーの臨床推論と科学的方法論・脳の神経可塑性	20分
[4]	長文空所補充（設問1〜5）	睡眠中のシナプス恒常性仮説と海馬から新皮質への記憶固定化・健忘症	12分
[5]	長文読解（設問1〜5）	都市の大気汚染と市民科学・機械学習センサー網による環境政策ループ	20分
[6]	和文英訳選択（設問1〜3）	医学格言「病める人を診よ」の誤解とオスラーの真意（5択問題）	8分

[1] 次の英文を読み、設問 1.〜5. に最も適した答えを a.〜d. の中から一つ選べ。

1　Few transitions in human prehistory have reshaped our biology as profoundly as the shift from foraging to farming in the Fertile Crescent around 10,000 years ago. By domesticating cereal crops and herd animals, early agriculturalists secured a predictable supply of calories, built permanent villages, and supported much denser populations. Yet skeletal remains from early Neolithic sites tell a surprising story: compared with their hunter-gatherer predecessors, the first farmers were on average shorter and suffered from higher rates of dental cavities and iron-deficiency anemia.

2　A major turning point came with the secondary products revolution — the realization that livestock could provide not just meat, but renewable resources such as milk, wool, and traction. Initially, adult humans lacked the enzyme lactase needed to digest lactose, the sugar abundant in fresh milk. Early pastoralists got around this barrier by fermenting milk into cheese and yogurt, a process that drastically reduced its lactose content. [a] Later, however, a genetic mutation allowed lactase production to persist into adulthood. [b] Because fresh milk provided both uncontaminated fluid and vital calories during droughts, individuals carrying this mutation enjoyed a massive survival advantage. [c] Archaeological lipid residues preserved inside ancient pottery shards confirm that dairy processing was already widespread in Anatolia by 6500 BCE. [d]

3　Recent advances in ancient DNA extraction have overturned earlier assumptions about how fast this trait spread. Whereas dairy farming reached Central Europe around 5500 BCE, genetic analysis of Bronze Age skeletons shows that lactase persistence remained below 10 percent in Europeans until roughly 2000 BCE — nearly 3,500 years after cheese-making began. In other words, cultural innovation preceded genetic adaptation by millennia, proving that human behavior often paves the way for natural selection.

1. Which of the following is NOT mentioned as a consequence of the shift to farming in paragraph 1?
a. higher population density b. taller average stature c. more frequent tooth decay d. a steadier food supply

2. The underlined phrase "got around" in paragraph 2 is closest in meaning to ___.
a. overcame b. publicized c. worsened d. abandoned

3. Where would the following sentence best fit in paragraph 2? Choose [a], [b], [c] or [d].
Still, researchers long debated when early herders first began milking their cattle.

4. How many years passed between the arrival of dairy farming in Central Europe and the widespread rise of lactase persistence?
a. About 1,000 years. b. About 2,000 years. c. About 3,500 years. d. About 5,500 years.

5. According to paragraph 3, which of the following is true?
a. Ancient Europeans could drink fresh milk before they learned to make cheese.
b. Cultural practices like fermenting milk developed long before the genetic mutation became common.
c. Over 90 percent of Central Europeans carried the lactase persistence gene in 5500 BCE.
d. Genetic adaptation always occurs before cultural innovation in human history.

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[2] 次の 1.〜5. は What use is a warm bath before sleep? と題する一続きの文章の一部である。それぞれの英文について、下線部分に誤りを含んでいるものを記号(a)〜(d)の中から一つ選べ。

1. Taking a warm bath 90 minutes before bed (a)helps you fall asleep faster, (b)which is because it (c)draws blood to the hands and feet, thereby (d)lower your core body temperature.

2. Unless your core temperature (a)doesn't drop by about 1°C, your brain (b)will struggle to enter deep sleep, (c)no matter how exhausted you (d)feel.

3. (a)Neither has a scalding hot shower right before bedtime (b)prove effective, (c)since it overheats the body and delays the release (d)of melatonin.

4. Melatonin is a hormone (a)secreted by the pineal gland, and light from smartphone screens (b)prevents it from (c)releasing normally (d)into the bloodstream.

5. Warm footbaths can also (a)be used to (b)promoting peripheral circulation in elderly patients (c)who suffer from chronic (d)insomnia.

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[3] 次の英文を読み、設問 1.〜5. に最も適した答えを a.〜d. の中から一つ選べ。

1 Clinical diagnosis, at its core, is the scientific method practiced at the bedside. As Sir William Osler taught his medical students over a century ago, a physician must begin not with textbook theories, but with meticulous observation of the patient's history and physical signs. Only after gathering these primary facts should the clinician formulate a differential diagnosis — a structured list of competing hypotheses that could account for the symptoms.

2 The danger for novice doctors is premature closure: latching onto the most obvious diagnosis and ignoring subtle clues that contradict it. To guard against this cognitive bias, experienced diagnosticians actively test each hypothesis by asking what clinical findings must be present if a given disease is the culprit,

and eliminating possibilities one by one. Moreover, as a patient's condition evolves, the physician must be ready to revise the initial hypothesis rather than stubbornly defending it.

3 Mastering this diagnostic mindset takes years of deliberate practice, because the human brain naturally favors quick, intuitive shortcuts over slow analytical reasoning. Yet neuroimaging studies show that repeated clinical training strengthens neural pathways between the prefrontal cortex and memory networks, eventually turning systematic bedside observation into a reflex.

1. According to paragraph 1, what should a physician do first when diagnosing a patient?
a. Memorize rare textbook theories. b. Carefully observe the patient's signs and history.
c. Prescribe medication to test a hypothesis. d. Eliminate the most obvious possibility.

2. In paragraph 2, "premature closure" refers to the mistake of ____.
a. discharging a patient from the hospital too early
b. refusing to share a diagnosis with colleagues
c. settling on an initial diagnosis without considering contrary evidence
d. generating too many hypotheses at the same time

3. Why must a physician be prepared to revise an initial hypothesis?
a. Because a patient's clinical condition may change over time.
b. Because textbook theories are always incorrect.
c. Because patients rarely tell the truth about their history.
d. Because diagnostic tests are too expensive to repeat.

4. The underlined phrase "a reflex" in paragraph 3 is closest in meaning to ____.
a. an automatic habit b. a painful symptom c. a rare exception d. a conscious burden

5. According to the passage, which of the following is NOT true?
a. A differential diagnosis consists of multiple possible explanations for a patient's symptoms.
b. Our brains are naturally inclined to use fast, intuitive shortcuts.
c. Clinical training alters neural connections in the brain.
d. Experienced doctors never need to test their hypotheses against clinical findings.

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[4] 次の英文を読み、1〜5 の下線部に入る最も適した語(句)を a.〜d. の中から一つ選べ。

While we are awake, learning and sensory experience continuously strengthen synapses throughout the cerebral cortex. If this strengthening went unchecked, neural circuits would soon consume an unsustainable amount of energy and lose their capacity to encode new information. According to the synaptic homeostasis hypothesis, slow-wave sleep solves this problem by selectively scaling down weaker connections while __1__ the most important ones, __2__ restoring the brain's signal-to-noise ratio.

At the same time, newly acquired memories for facts and events — initially held in a temporary buffer called the hippocampus — are replayed during sleep and gradually transferred to the neocortex for permanent storage. Patients who __3__ bilateral damage to the hippocampus cannot form new declarative memories, an impairment known as anterograde amnesia, even though memories consolidated years __4__ the lesion remain largely intact. Thus, sleep is far from a passive resting state; rather, it __5__ the active reorganization of neural architecture.

1.	a. preserving	b. discarding	c. disrupting	d. abolishing
2.	a. instead	b. otherwise	c. thereby	d. nevertheless

3.	a. abstain	b. sustain	c. detain	d. contain
4.	a. prior to	b. in return for	c. on behalf of	d. owing to
5.	a. makes light of	b. gives rise to	c. calls off	d. falls short of

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[5] 次の英文を読み、設問 1.〜5. に最も適した答えを a.〜d. の中から一つ選べ。

1 Official air-quality monitoring stations are expensive and sparse: a metropolis of millions may rely on fewer than a dozen reference monitors, leaving block-by-block pollution hotspots invisible. In Oakland, California, environmental researchers partnered with residents to deploy a dense network of low-cost optical sensors mounted on streetlights and residential porches, combined with mobile sensors on Google Street View cars.

2 Because low-cost sensors can drift over time due to humidity, the team trained a machine learning algorithm to calibrate the raw readings against reference stations. The resulting high-resolution map revealed that diesel exhaust levels could vary by up to eightfold within a single city block, largely driven by port drayage trucks cutting through residential side streets near schools.

3 Armed with this granular data, neighborhood coalitions worked with municipal transport planners to designate truck-restricted zones and upgrade school ventilation systems. By showing residents a transparent feedback loop — from hosting a sensor to seeing real-time air data and achieving concrete policy enforcement — the project has become a blueprint for community-driven environmental health.

1. What is a major limitation of traditional official air-quality monitoring stations?
a. They can only measure humidity.
b. Too few of them are installed to capture neighborhood-level variations.
c. They are mounted on residential porches.
d. They violate residents' privacy.

2. Why did the researchers use a machine learning algorithm in paragraph 2?
a. To replace all official reference stations
b. To correct measurement errors in low-cost sensors caused by environmental factors
c. To drive Google Street View cars automatically
d. To increase humidity in residential areas

3. The underlined phrase "cutting through" in paragraph 2 is closest in meaning to ____.
a. taking a shortcut across b. repairing the surface of c. reducing the noise of d. banning vehicles from

4. What policy change resulted from the high-resolution pollution data?
a. Port operations were permanently shut down.
b. Schools were relocated to another city.
c. Heavy trucks were restricted from certain residential routes and school ventilation was improved.
d. Residents were fined for using optical sensors.

5. According to the passage, which of the following is NOT true?
a. Diesel exhaust levels differed by as much as eight times within one block.
b. Both stationary and mobile sensors were used in the Oakland project.
c. Low-cost sensors are completely unaffected by humidity.
d. Concrete data helped residents persuade city planners to take action.

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[6] 次の日本文の下線部 1〜3 を英訳した場合、それぞれ最も適切な英文を a.〜e. より一つ選べ。

「病気ではなく、病める人を診よ」という言葉は、1最新の検査技術や数値データばかりに頼りがちな現代の医療現場において、多くの医師や医学教育者が好んで引用する格言である。2だが、この言葉を文字通りに受け取る人々の思惑とは裏腹に、提唱者のオスラーは科学的検査を軽視していたわけでは決してない。3それどころか彼の主著の第1章の末尾には、正確な実験室検査こそが臨床判断の土台であると明記されているのである。

1.

a. This is a maxim fondly quoted by many physicians and medical educators in modern clinical settings, where people tend to rely too heavily on the latest testing technologies and numerical data.

b. Modern medical settings rely on the latest testing technologies and numerical data because many physicians and medical educators love to quote this maxim.

c. This maxim is expected by modern clinical settings that tend to depend on the latest testing technologies, as well as by physicians and medical educators.

d. Physicians and medical educators who rely only on numerical data and the latest testing technologies are fond of quoting this maxim in modern hospitals.

e. By quoting this maxim, many physicians and medical educators hope to rely on the latest testing technologies in modern clinical settings.

2.

a. But those who take these words literally actually know that Osler, who proposed them, looked down on scientific testing.

b. Contrary to the expectations of those who take this phrase at face value, however, its proponent Osler by no means made light of scientific testing.

c. Nevertheless, contrary to Osler's speculation, people who take this phrase literally do not actually value scientific tests.

d. Unlike what those who use the maxim might believe, Osler used the sentence to criticize scientific testing.

e. However, Osler's true intention was to ignore scientific testing, although those who take the words literally are unaware of it.

3.

a. On the contrary, Chapter 1 of the end of his masterwork states clearly that clinical judgment is the foundation of accurate laboratory tests.

b. By contrast, at the end of his masterwork, he wrote Chapter 1 to show that accurate laboratory tests are based on clinical judgment.

c. As a matter of fact, at the end of Chapter 1 of his masterwork, it is clearly stated that accurate laboratory testing is the very foundation of clinical judgment.

d. Although it seems the exact opposite, he writes a brief summary at the end of Chapter 1 without mentioning laboratory testing.

e. Darwin wrote the same thing at the end of Chapter 1, namely that clinical judgment does not require accurate laboratory testing.